APPLICATION FOR CERTIFICATION

2016 MODEL YEAR

Fuel Type:	**Dedicated CNG**	
	IMPCO	**GM**
Test Group	**GZ9XD06.0DC2**	**GGMXD06.0399** **GGMXD06.0398**
Evap Families	**GZ9XR0000DCA**	**GGMXF0176860**
Durability Group Description	**Four Stroke, Otto Cycle, CNG, Gasoline, SFI, Ceramic Monolith Pd/Rh Catalyst**	
Applicable Standards	**Federal MDV Tier 2/Bin 7** **California MDV SULEV230**	
General Motors:	**G4500 Express/Savana Cutaway Chassis (10,001 – 14,000 lb GVWR)**	
Projected Sales	**California:** **Federal:**	
Vehicle Tested:	**E10024EX/01**	
For Questions, Contact	**Bruce Schafer (586-276-4348)**	

Submitted: February 3, 2016
Revised: March 9, 2016
Revised: June 15, 2016

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Section 1 – Communications

Manufacturer's name:

IMPCO Automotive
7100 15 Mile Road
Sterling Heights, MI 48312

Authorized representative:

Bruce Schafer
Regulatory and Compliance Manager
Telephone: (586) 276-4348
Email: BSchafer@ImpcoAutomotive.com

Section 2 – Statement of Confidentiality

This application contains technical evaluations, test results, and reports, all of which are Confidential Business Information (CBI) and we request that the entire document be treated as such. All applicable pages will be labeled confidential.

Section 3 – Fuels & Lubricants

A: Fuels

The CNG low pressure conversion system provided by IMPCO Automotive allows the vehicle to operate on any CNG that is intended for use in motor vehicles.

A CNG FTP was performed on a single-roll dynamometer. The following fuel was used for emissions testing:
Certification-grade CNG meeting requirements 100.3.5 of CA exhaust emission standards and test procedures for MY 2001 and beyond was used. This fuel also meets the specifications of 40 CFR 86.113-94(e). CNG fuel specifications are provided in Appendix F.

B: Lubricants

Engine lubricants specified by the OEM are required for satisfactory engine performance and durability. No special or unusual lubricants or additives are required beyond those prescribed in the original Owners Manual.

Section 4 – Facilities & Test Procedures

All tests performed to demonstrate compliance with the emission requirements were conducted at test laboratories recognized by the US EPA as being properly equipped to provide quality data. The qualification of a test facility is based upon meeting several critical elements, some of these elements are described below.

Testing Locations

FTP/HWFET
ProCat
30844 Century Drive
Wixom, MI 48393

Competent Staff

Properly trained technicians are required as well as personnel to properly set up, calibrate and maintain all test equipment.

Precision Equipment

Emissions sampling and measurement equipment used for testing must be acknowledged by the emissions test industry as quality equipment that is designed for the purpose it is used. Emissions equipment used to certify this engine family meets the requirements of 40 CFR 86, Subpart B, as applicable.

Regular Calibration

Equipment utilized to certify this product is calibrated in the manner and intervals prescribed in 40 CFR 86, Subpart B, as applicable.

Standardized Test Procedures

All tests were performed under conditions prescribed in 40 CFR 86.

Section 5 – Maintenance and Warranty

A: Maintenance

IMPCO provides a supplemental Owner's Manual that defines maintenance on the alternative fuel system. After sale, all service and warranty work on the fuel system will be performed by IMPCO-authorized technicians. Maintenance of the gasoline fuel system is to be performed according to the OEM Owner's Manual using normal OEM dealer channels.

B: Warranty

The OEM original equipment warranty continues to apply to parts, systems and subsystems of the gasoline engine, emission system, and vehicle. Refer to the OEM Owner's Manual for details.

IMPCO's California emissions warranty was submitted to DMS.

In addition to the OEM original equipment warranty, IMPCO provides a Federal Emissions Warranty. The Federal emissions warranty statement has been uploaded to Verify.

Alternative Fuel Systems
Bi-Fuel & Dedicated (CNG & LPG)

Warranty Statement

PPI-53029-002 (Rev F)

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EMISSION CONTROL SYSTEM WARRANTY

All vehicles are eligible for Federal Emissions Control System Warranty Coverage. If the emissions control label contains language stating the vehicle conforms to California regulations, the vehicle is also eligible for the California Emissions Control System Warranty Coverage.

For all maintenance or other work not covered by warranty, within and outside of the warranty period of the vehicle, IMPCO strongly recommends that all maintenance be performed by an IMPCO- authorized technician certified to work on alternative fuel vehicles.

KNOW WHEN YOUR WARRANTY BEGINS

Your Warranty Start Date is the day you take delivery of your new vehicle or the day it is first put into service (for example, as a dealer demonstrator),whichever occurs first. The mileage at the date of delivery of your new vehicle put into service is the warranty mileage start.

FEDERAL ALTERNATIVE FUEL SYSTEM WARRANTY COVERAGE

The FEDERAL warranty period for alternative fuel components is 3 years or 36,000 miles (58,000km) from the day it is first put in service, whichever occurs first.

For vehicles within the warranty period, an IMPCO-authorized technician will repair or replace, at IMPCO's discretion, any parts that are determined by IMPCO to be defective in material or workmanship. All warranty work on the alternative fuel system must be performed by an IMPCO-authorized technician.

Performance Warranty

The Performance Warranty covers repairs which are required during the first 2 years or 24,000 miles of vehicle use (whichever occurs first) due to the vehicle failing an emission test. Specified major emission control components are covered for the first 8 years or 80,000 miles (whichever occurs first). If you are a resident of an area with an Inspection and Maintenance (I/M) program that meets federal guidelines, you are eligible for this warranty protection provided that:

- Your car or light-duty truck fails an approved emissions test; and
- Your vehicle is less than 2 years old and has less than 24,000 miles (up to 8 years/80,000 miles for certain components); and
- Your state or local government requires that you repair the vehicle; and
- The test failure does not result from misuse of the vehicle or a failure to follow the manufacturers' written maintenance instructions; and
- You present the vehicle to an IMPCO Automotive warranty-authorized service center, along with evidence of the emission test failure, during the warranty period.

During the first 2 years/24,000 miles (whichever occurs first), the Performance Warranty covers any repair or adjustment which is necessary to make your vehicle pass an approved, locally-required emission test and as long as your vehicle has not exceeded the warranty time or mileage limitations and has been properly maintained according to the manufacturer's specifications.

Specified Major Emission Control Components

There are specified major emission control components, covered for the first 8 years or 80,000 miles of vehicle use (whichever occurs first) on 1995 and newer vehicles:

- Catalytic converters – (Determined that an IMPCO Parts caused the Catalytic Converter to fail)
- The electronic emissions control unit or computer (ECU)

Emission Control Parts

- **Exhaust Gas Conversion Systems**: catalytic converter
- **Evaporative Emission Control System**: purge valve, fuel filler cap, purge solenoid, vapor storage canister and filter
- **Positive Crankcase Ventilation (PCV) System**: PCV valve, PCV solenoid
- **Air Injection System**: Air pump, diverter, bypass, or gulp valve, reed valve, anti-backfire or deceleration valve
- **Early Fuel Evaporative (EFE) System**: EFE valve, thermal vacuum switch, heat riser valve
- **Fuel Metering System**: electronic control module (unit) or EFI air flow meter, computer command module or mixture control unit, deceleration controls, electronic choke, fuel injectors, fuel injection units and fuel altitude compensator sensor, bars or rails for EFI or TBI systems, mixture settings on sealed fuel mixture control solenoid, diaphragm or other systems, fuel metering components that achieve closed, other feedback control sensors, loop operation switches and valves
- **Air Induction System**: thermostatically controlled air cleaner, air box
- **Ignition Systems**: electronic spark advance timing advance, retard systems, high energy electronic ignition
- **Miscellaneous Parts**: hoses, gaskets, brackets, clamps and other accessories used in the above systems

If your vehicle is within the age and mileage limits for the applicable emissions warranty, the manufacturer can only deny coverage if evidence shows that you have failed to properly maintain and use your vehicle, causing the part or emission test failure. Some examples of misuse and improper maintenance include the following:

- Vehicle abuse such as off-road driving or overloading; or
- Tampering with emission control parts or systems, including removal or intentional damage of such parts or systems; or
- Improper maintenance, including failure to follow maintenance schedules and instructions specified by manufacturer, or use of replacement parts which are not equivalent to the originally installed parts.

EMISSIONS DEFECT WARRANTY COVERAGE

During the warranty coverage period, IMPCO Automotive warrants that:

- Your vehicle or engine is designed, built, and equipped to meet – at the time it is sold - the emissions regulations of the U.S. Environmental Protection Agency (EPA).
- Your vehicle or engine is free from emission-related defects in factory-supplied materials or workmanship, which are defects that could prevent the vehicle or engine from conforming to applicable EPA regulations.
- You will not be charged for diagnosis, repair, replacement, or adjustment of parts containing an emissions-related defect.

The warranty coverage period for:

- Passenger cars, light duty trucks (applies to vehicles up to 8,500 pounds GVWR)
  - The emission warranty coverage period is 8 years or 80,000 miles (whichever occurs first) for catalytic converters, electronic emission control units, and onboard emissions diagnostic devices.
  - All other parts covered under your emissions warranty are warranted for 3 years or 36,000 miles whichever comes first.
- Heavy duty vehicles (applies to trucks over 8,500 pounds GVWR up to 19,500 pounds GVWR)
  - The emissions warranty coverage period for heavy duty vehicles (HDVs) is 5 years or 50,000 miles (whichever comes first) for all parts covered by your emissions warranty.

CALIFORNIA ALTERNATIVE FUEL SYSTEM WARRANTY COVERAGE

The CALIFORNIA Emission Control System Warranty coverage applies if your vehicle meets **both** of the following requirements:

1. Your vehicle is certified for sale in California as indicated on the vehicles under hood emission control information label.
2. Your vehicle is registered in California or other states adopting California Emission and Warranty regulations.
   Subject to change, the following states have adopted and are enforcing the California Emissions Warranty regulations:
   - **Passenger Car & Light-duty Trucks** (up to 8,500 pounds GVWR)
     - California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont and Washington (Note: New York adopted California emissions standards, but not the California Emissions Warranty; the Federal Emission Control Warranty applies to all non-PZEV vehicles in New York)

   - **Medium-Duty Passenger Vehicles** (up to 10,000 pounds GVWR designed primarily for the transportation of persons. Excludes incomplete trucks, trucks with a seating capacity either over twelve persons total or over nine persons rearward of the driver's seat, or trucks with an open cargo area of at least six feet of interior length)
     - California, Connecticut, Maine, Maryland, Massachusetts, Oregon, Rhode Island, Vermont and Washington

   - **Medium-Duty Vehicles** (over 8,500 pounds GVWR up to 14,000 pounds GVWR)
     - California, Connecticut, Maine, Maryland, Massachusetts, Oregon, Rhode Island, and Vermont.

   - **Heavy-Duty Vehicles/Engines** (over 14,000 pounds GVWR) – California.

IMPCO AUTOMOTIVE ALTERNATIVE FUEL SYSTEM CARB EMISSION CONTROL SYSTEM WARRANTY

The California Air Resources Board and IMPCO Automotive are pleased to explain the emission control system warranty on your vehicle. In California, new motor vehicles must be designated, built and equipped to meet the State's stringent anti-smog standards. IMPCO Automotive must warrant the emission control system on your vehicle for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, and engine computer. Also included may be hoses, belts, connectors and other emissions-related assemblies. Where a warrantable condition exists, IMPCO Automotive will repair your vehicle at no cost to you including diagnosis, parts and delivery.

CALIFORNIA VEHICLE EMISSIONS INSPECTION PROGRAM (SMOG CHECK)

- Should a vehicle installed with the IMPCO Automotive alternative fuel system fail an inspection during its warranty period, the vehicle owner may choose to have it repaired at a designated Warranty & Repair Station.
  Should the failure be determined to have been caused by a warranted part in the IMPCO Automotive alternative fuel system, then IMPCO Automotive will be liable for expenses associated with the detection and correction of the part failure or malfunction; unless it is determined that part failure or malfunction was caused by abuse, neglect, or improper maintenance.

  - Should it be determined that the failure was caused by abuse, neglect, or improper maintenance, the vehicle owner shall be liable for all diagnostic and repair expenses.
  - Should it be determined that the failure was caused by defects covered under warranty, then the vehicle owner will not be charged for the diagnostic and repair costs of the warrantable defect.

IMPCO AUTOMOTIVE ALTERNATIVE FUEL SYSTEM CARB EMISSION CONTROL SYSTEM WARRANTED PARTS

IMPCO Automotive covers the applicable emissions parts as listed in the OEM Owner's Manual and Warranty book for a period of five (5) years/50,000 miles. The following gaseous fuel (LPG or CNG) specific emissions parts are also covered during this time period.

5 Years / 50,000 miles
Injectors
Fuel rails
Low pressure hoses

The long-term emissions DEFECT WARRANTY provided by IMPCO Automotive covers the parts listed below for a period of seven (7) years/70,000 miles.

7 Years / 70,000 miles
PCM
CNG High Pressure Regulator/LPG Vaporizer
Catalytic converter
CNG Fuel Tanks
LPG Fuel Tanks

What Is Covered:
An authorized IMPCO Warranty & Repair Service Centers will repair, replace or adjust, at IMPCO's discretion, all parts necessary to correct any defects in materials or workmanship of the IMPCO Alternative Fuel System

What Is Not Covered:

- Part (s) not supplied or authorized by IMPCO Automotive
- Part (s) that failed due to non-authorized modifications or alternations
- Part (s) that failed due to improper or negligent installation
- Part (s) that failed due to installation on a non-approved application
- Part (s) that failed due to use of an improper fuel or refueling procedure
- Part (s) that failed due to improper operation, abuse or collision damage
- Part (s) that failed due to the application of corrosion protection
- Vehicle pick-up and delivery charges (including towing charges)
- Standard shop supplies, including but not limited to, antifreeze and grease

Proof of Installation: Documentation of the installation date and vehicle mileage is required for the IMPCO Automotive warranty to be honored.

Repair of Replacement Parts: Authorized IMPCO Warranty & Repair Service Centers will use new or remanufactured parts as authorized by IMPCO Automotive when making warranty repairs.

Return of Failed Parts: All failed parts will be returned to IMPCO Automotive by the authorized IMPCO Warranty & Repair Service Centers for diagnosis.

IMPCO (MANUFACTURER) WARRANTY COVERAGE

The warranty period shall begin on the date that the vehicle was installed with the IMPCO Alternative Fuel System & is delivered to its intended user. Should the vehicle be placed into service as a "demonstrator" or "company" car prior to delivery, the date it is first placed into service becomes the start date of the system warranty.

- IMPCO Automotive warrants that the vehicle or engine is:
    - Designed, built & equipped so as to conform, at the time of sale, with all applicable regulations adopted by the California Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code: and
    - Free from defects in materials & workmanship that would cause the vehicle's on-board diagnostic malfunction indicator light to illuminate, for a period of 3 years or 50,000 miles, whichever first occurs:
    - Free from defects in materials & workmanship which cause the failure of a specifically warranted long-term emission control part for 7 years or 70,000 miles, whichever first occurs.
- The warranty period shall be:
    - Per the terms outlined by the California Air Resources Board, light-duty, medium-duty, heavy-duty vehicles and motor vehicle engines used in such vehicles shall be warranted for a period of use of five years or 50,000 miles, whichever first occurs.
    - A warranty claim may be submitted by bringing a vehicle to any repair facility authorized by IMPCO Automotive to service that vehicle. The Warranty & Repair Service Center will contact IMPCO Automotive to determine the validity of any warranty claims.

Warranty services and/or repairs shall be provided at all authorized IMPCO Automotive Warranty & Repair Service Centers, a listing of authorized IMPCO Automotive Warranty & Repair Service Centers has been provided on a separate sheet.

Please check our website: http://impco-asap.com/cms/home/ for updated information.

- Provided that diagnostic analysis is performed at one of the listed Warranty & Repair Service Centers, the vehicle owner will not be charged for diagnostic labor that leads to the determination that a warranted part is defective. IMPCO Automotive is liable for any damages incurred by other vehicle components triggered by a failure of any warranted part still under warranty. Warranty Repairs will be made within a reasonable time period, not to exceed 30 days from the date when the vehicle is initially diagnosed as presenting a warrantable condition.
- The inability of the Warranty & Repair Service Center to complete warranty repairs within the 30 day time frame shall constitute an emergency under the terms outlined by the California Air Resources Board.
- In the event of an emergency condition, any replacement part designated by a manufacturer may be used in the performance of any maintenance or repairs. Use of these parts will not reduce the warranty obligations of IMPCO Automotive, except the conditions that the repair or replacement is for a non-warranted part.
- Each manufacturer shall furnish with each new vehicle or engine, written instructions for the maintenance and use of the vehicle or engine by the owner.
- Each manufacturer shall furnish with each new vehicle or engine, a list of the warranted parts installed on the vehicle or engine.

OEM Maintenance and Warranty Coverage

The vehicle manufacturer’s original equipment warranty applies to parts, systems and subsystems of the OEM’s engine, emission system and vehicle. Refer to the vehicle manufacturer’s Owner’s Manual. All OEM-specified vehicle, engine, and fuel system maintenance does not change. Service and warranty of the gasoline fuel system is to be performed through normal vehicle manufacturer’s dealer channels.

Warranty Exclusions

- Warranty coverage shall be excluded should it be determined that the vehicle or engine has been abused, neglected, or improperly maintained, and that such abuse, neglect, or improper maintenance was the direct cause of the need for the repair or replacement of the warranted part.
- IMPCO Automotive may deny any emission performance warranty claim on the basis of noncompliance with the written instructions if:
    - IMPCO Automotive is able to prove that the vehicle failed an inspection because the vehicle was abused, neglected, improperly maintained, or that the required maintenance was performed in such a manner that resulted in a component being improperly installed or a component or related parameter being adjusted substantially outside of IMPCO Automotive designated specifications, or maintenance was performed on the vehicle which resulted in the removal or rendering inoperable of any of the components that affect the vehicle's emissions.
- To determine whether an owner has complied with the written instructions, IMPCO Automotive may require that an owner submit evidence of compliance with the written instructions which are believed to:
- Not to have been performed; and
- If they were not performed, could be the cause of the failed inspection.
- Evidence of compliance with a maintenance instruction may consist of:
- A maintenance log book endorsed at the approximate time or mileage intervals specified in the written instructions by a designated service technician; or
- A repair order, sales receipt, or similar, demonstrating that the vehicle received scheduled maintenance at the approximate time or mileage intervals specified in the written instructions; or
- A written statement by the vehicle owner that maintenance was performed at the approximate time or mileage interval specified in the written instructions using proper replacement parts. Failure of the vehicle or engine owner to ensure the performance of such scheduled maintenance or to keep maintenance records shall not, per se, be grounds for disallowing a warranty claim.
- In no case may IMPCO Automotive deny an emission performance warranty claim on the basis of: Work performed to rectify an unsafe condition, including an unsafe drivability condition, attributable to IMPCO Automotive, provided that the vehicle owner had taken action to put the vehicle in a condition that conforms with IMPCO Automotive' and California Air Resources Board's emission standards in a timely manner; or any cause attributable to IMPCO Automotive.
- Within the 30 days, the manufacturer shall provide the owner, in writing, with an explanation as to why any claim is being denied.
    - Failure to notify a vehicle owner that a warrantable condition does not exist within 30 days shall result in IMPCO Automotive being responsible for repairing the vehicle free of charge to the vehicle owner.
- IMPCO Automotive shall incur all costs associated with a determination that an emission performance warranty claim is valid.
- Alternative Fuel Systems provided by IMPCO Automotive are low pressure emissions components, and do not include fuel storage tanks. Approved IMPCO installation facilities will convert the entire gasoline vehicle to an alternative fuel vehicle using only approved compatible components covered under our manufacturer's warranty. The installer can provide this warranty to you with the delivery of your completed vehicle. You may also request this warranty prior to, or any time during, the conversion process. Tank storage and high pressure components will be included in the installer's warranty – separate from the IMPCO Alternative Fuel System Warranty. The installer may supply this warranty as a supplemental warranty included with additional warranty coverage.

OWNER'S WARRANTY RESPONSIBILITIES

The vehicle owner is responsible for the performance of the required maintenance as listed in the owner's manual and as developed and provided in the OEM service manual. IMPCO Automotive recommends that all receipts covering maintenance on the car are retained; however, warranty cannot be denied based solely because of a lack of receipts or failure to conduct all scheduled maintenance.

It is the responsibility of the vehicle owner/operator to present any problem to an IMPCO Automotive Warranty & Repair Service Center as soon as it is observed. Warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

IMPCO Automotive reserves the right to deny warranty coverage if the subject vehicle(s) or part(s) have failed due to abuse, neglect, improper maintenance, and/or unapproved modifications.

IMPCO Warranty Summary

2011 and Older Vehicles - **24 months or 24,000 miles** whichever comes first. (PARTS ONLY)

2012 and Newer Vehicles - **36 months or 36,000 miles** whichever comes first. (PARTS & LABOR ONLY) NO EXCEPTIONS TO THE LABOR TIME GUIDE.

Vehicles that **exceed 25,000 miles** are not authorized for LPG/CNG conversion unless prior approval is provided in writing by IMPCO Automotive. Any vehicle converted that exceeds this mileage will not be covered under any warranty by IMPCO Automotive & IMPCO Technologies, Inc. Warranty coverage is transferable; however, a copy of the Purchase agreement between the seller and the owner must be provided to IMPCO Automotive Warranty Administration.

IMPCO Warranty Registration
Once the vehicle has been converted to LPG/CNG by an IMPCO Automotive Certified Installer (CI's) (Definition of IMPCO Automotive Certified Installer is an installer who has a written agreement document number CS F151 & CS F152 with IMPCO Automotive) or when the vehicle is sold to the end user the vehicle must be registered for Warranty. The following IMPCO Automotive Website: http://impco-asap.com/cms/home/warranty_registration is the only source for Certified Installers (CI's) to input Warranty Registration for each vehicle. All vehicles converted by CI's with IMPCO Automotive Kits must be registered in the IMPCO Automotive Warranty system within 30 days of the installation. The warranty will not be valid and all claims will be delayed until warranty registration is complete.

ALL fields must be populated to accurately reflect the vehicle being registered. The system will point out any deficiencies before accepting the registration. **NOTE:** Print the registration page for your records **BEFORE** submitting. Place the Owner's and Warranty Manual Supplements in a prominent location in the dash or center console where the customer can easily locate them. It is strongly recommended to review the highlights of the Owner's Manual Supplement with the Customer.

Coverage outlined above includes the following parts that are included in the IMPCO Automotive LOW PRESSURE KITS:

ECM Bracket
ECM
Regulator Bracket
Regulator
Harnesses
Injectors
Hoses
Fuel Rails
Map Sensor Assembly
Fuel Pressure Sensor
Fuel Selector Switch
Modules

Above mentioned warranty includes the following parts that are included in the IMPCO Automotive HIGH PRESSURE KITS:

Tank Brackets
Tanks
Fuel Lines
Fittings
Tank Shields/Covers – Corrosion ONLY
High Pressure Filter Assembly
Pressure Relief Device
Fuel Gauges
Shut Off Valves

Federal Emissions Warranty (ARB)

Passenger cars, light duty trucks 36 Months/36,000 Miles
(Applies to vehicles up to 8,500 pounds GVWR)

Heavy duty vehicles 60 Months/50,000 Miles
(Applies to trucks over 8,500 pounds GVWR up to 19,500 pounds GVWR)

Performance Warranty 24 Months/24,000 Miles
Fuel Injectors, Hoses, brackets, clamps

Major Emission Control Components 96 Months/80,000 Miles
ECU and Catalytic Converters

California Emissions Warranty (CARB)

Vehicles of 14,000 lbs and Under Short Term **36 Months/50,000 Miles**

Long Term **84 Months/70,000 Miles**

Vehicles of 14,000 lbs and Over 60 Months/50,000 Miles

Performance Warranty

36 Months/50,000 Miles
(Vehicles of 14,000 lbs and Under)

IMPCO Automotive Warranty

2011 and Older Vehicles 24 months/24,000 Miles whichever comes first. (PARTS ONLY)

2012 and Newer Vehicles 36 months/36,000 Miles whichever comes first. (PARTS & LABOR ONLY)

AUTHORIZED WARRANTY & REPAIR SERVICE CENTERS

Do not contact IMPCO Automotive directly. A complete listing of authorized IMPCO Automotive Warranty & Repair Service Centers can be found at http://impco-asap.com/cms/home/

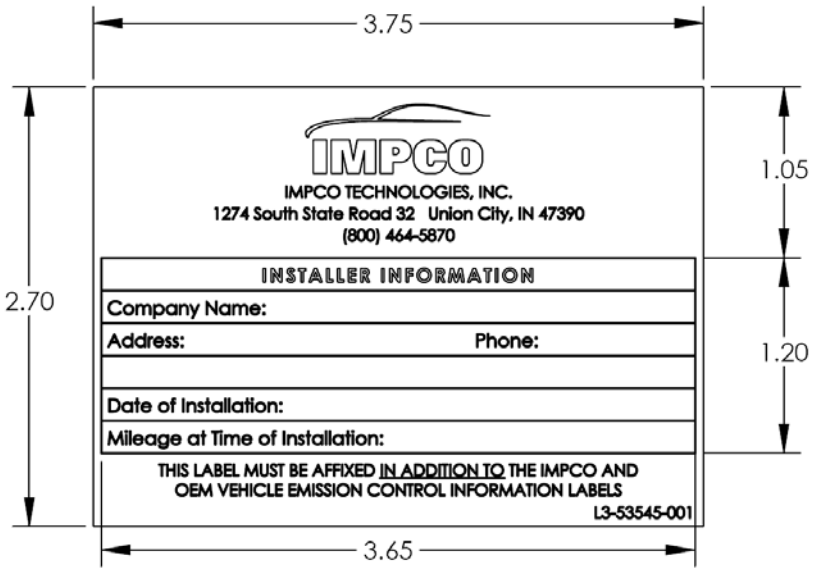
Section 6 – Labeling

The VECI label will be affixed in a permanent manner to each vehicle, in a location adjacent to the original emission control information label. If this label cannot be placed adjacent to the original label, it will be placed in a location where it will be seen by a person viewing the original label. The GM VECI will not be removed, and the label will not be affixed to any equipment that is easily detached from the vehicle.

See the sample label below, subject to EPA/ARB approval.

<table>
<tr><td colspan="2" rowspan="2">IMPCO AUTOMOTIVE</td><td colspan="3">VEHICLE EMISSION CONTROL INFORMATION</td><td>L3-XXXXX-XXX</td></tr>
<tr><td>OEM TEST GROUP
GGMXD06.0398
GGMXD06.0399</td><td>IMPCO TEST GROUP
GZ9XD06.0DC2</td><td>IMPCO EVAP FAMILY
GZ9XR0000DCA</td><td>VEHICLE MODEL YEAR
2016</td></tr>
<tr><td colspan="2" rowspan="2">Conforms to US EPA and California regulations and is certified for sale in California.</td><td colspan="4">This vehicle has been modified to operate only on CNG. This clean alternative fuel system has been certified to meet EPA and California emission standards and was manufactured and installed consistent with the principles of good engineering judgment and all US EPA regulations.
THIS VEHICLE IS EXCLUDED UNDER 40CFR1037.150(g).
Completed Vehicle Maximums: GVWR: 14,200# max.
Curb Weight: 12,070# max. Frontal Area: 85.0 ft2 max
THIS LABEL MUST BE AFFIXED IN ADDITION TO THE INSTALLER INFORMATION AND OEM VEHICLE EMISSION CONTROL INFORMATION LABELS</td></tr>
<tr><td colspan="4">CHANGES IN TUNE-UP SPECIFICATIONS: NONE</td></tr>
<tr><td>US EPA T2B7</td><td>OBD CA II</td><td colspan="4">PARTS REMOVED DURING INSTALLATION: GASOLINE FILLER, TANK, LINES, CANISTER, VAPOR VALVE, INJECTORS</td></tr>
<tr><td>CA MDV SULEV230</td><td>OBD CA II</td><td colspan="4">EMISSION CONTROL DEVICES: ECM / 2TWC / TWC / 2HO2S(2) / SFI</td></tr>
</table>

Installer Information Label
(The same label is used for every platform)



Section 7 – Technical Information

A. General Technical Description

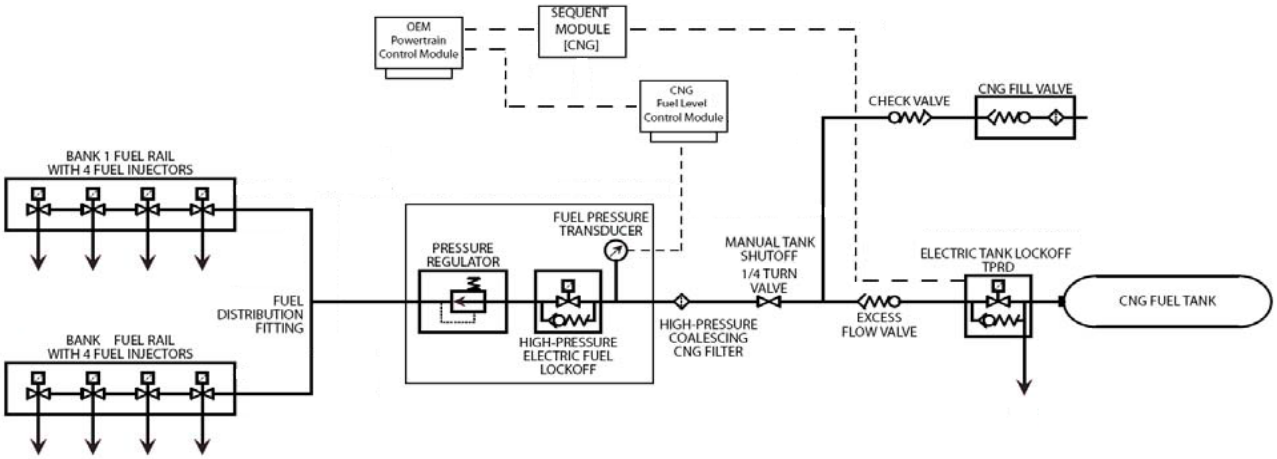
1. CNG Operation

Since the vehicle operates on CNG only, all gasoline components (gasoline filler, tank, lines, canister, vapor valve, fuel rail & injectors) are removed. The OEM ECU remains on the vehicle and will continue to perform all tasks it would when running on gasoline with the exception of the EVAP control.

2. CNG Fuel System

The vehicles that are converted to run on dedicated CNG use a sequential multi-point CNG fueling system. The CNG system includes:

1) Master shutoff valve located near the fuel tank.
2) CNG pressure regulator that regulates the pressure from the onboard storage fuel tank (max of 3,600 psi) to 95 psi (6.5 bar).
3) Electrical fuel lockoff solenoid mounted on the CNG pressure regulator.
4) CNG fuel lines and CNG filter to deliver CNG from the pressure regulator to the fuel rails.
5) CNG injectors at each cylinder to send CNG sequentially to each individual cylinder.
6) The OEM PCM is used to control CNG fueling.



B. OBD II System Description

The OEM ECU is retained and used to control CNG fueling. With the exception of the gasoline specific monitors (e.g. EVAP), which are disabled to prevent false MIL illumination, all other OEM monitors are fully operational. The functional operation of the OBD II system, including the algorithms, diagrams, and monitoring strategies, remain as described in the OEM gasoline application for this vehicle. No changes are made to monitoring strategies, and only MIL thresholds are re-calibrated to comply with CNG operation.

C. OBDII Testing

The following OBDII monitors were tested to demonstrate compliance with the OBDII standards:

- Fuel System Rich
- Fuel System Lean
- Oxygen Sensor Response (6-pattern):
  - Delayed Response Lean-to-Rich
  - Delayed Response Rich-to-Lean
  - Delayed Response Symmetric
  - Slow Response Lean-to-Rich
  - Slow Response Rich-to-Lean
  - Slow Response Symmetric
- Misfire
- Air-fuel Imbalance
- Catalyst Monitoring
- Variable Cam Timing

IMPCO Automotive's OBD II system has been approved by ARB.

D. On-Board Diagnostic System Approval

OBD II approval is below and has been uploaded to ARB DMS system and EPA's Verify system.

E. Parts List

All OEM components remaining on the vehicle are unaffected by the addition of the CNG fuel system.

	Manufacturer	
Fuel Gauge Module	Speedhut	MD-55901-001
Fuel Injectors – 8	Bosch	IJ-52696-003
Fuel Pressure Regulator	IMPCO	P240-206
Sequent Module – tank lockoff	MTM	DE815072

F. High-Cost Parts List

Parts	Part Cost	Labor Rate	Labor Hours	Replacement Cost
Regulator	$368.00	112.50	1.	$480.50
Catalytic Converter	$1,300.00	112.50	1.5	$1,468.75
CNG storage tanks	$5,002.00	112.50	4.0	$5,452.00
ECU-Sequent Module	$185.00	112.50	0.5	$241.25

Section 8 – Test Vehicle Information

A. Vehicle Description

Vehicle ID: E10024EX

All hardware and calibrations were updated to 2016MY GGMXD06.0399.

The highest test weight class within the OEM test group is 13,000 pounds. IMPCO elected to test at 13,000 pounds to represent all models within the test group.

B. Deterioration Factors

Catalysts and oxygen sensors were aged to 120,000 miles for testing using the GM aging protocol GMAC 1165L and GMAC 865, to the number of hours specified by GM. IMPCO 120K emissions were adjusted to 150K by subtracting the EPA assigned 120K DF to determine 4k emissions level. The 150K DF was determined by multiplying the 120K DF by 146/116. The calculated 150K DF was applied to the 4K emission level.

C. Data Summary

1. Test Type FTP

Veh ID: E10024EX/01
Model: G2500
Fuel: CNG
Displ: 6.0L
ETW: 13,000#
MFR Test #: VETS

		NMHC/ NMOG	NOx	CO	CO2	CREE	OPT-CREE	Fuel Economy
		(g/mi)						(mpg)
Unrounded Test Results	120K	0.038/ 0.044	0.048	1.12	728.4	731.3	743.5	9.7
Emissions Standards – EPA	120K	0.090	0.15	4.2				
ARB Cert Level Adjusted to 150K	150K	0.093		1.15				
Emissions Standards – ARB	150K	0.230 NMOG + NOx		3.0				

2. Test Type HWFET

MFR Test #: VETS

		NMHC/ NMOG	NOx	CO	CO2	CREE	OPT-CREE	Fuel Economy
		(g/mi)						(mpg)
Unrounded Test Results	120K	0.009/ 0.010	0.035	0.84	564.3	565.9	570.7	12.6
ARB Cert Level Adjusted to 150K	150K	0.045		0.87				

Section 9 – Statements of Compliance and Request for Certification

A. General Statements

1. Testing Conformance 40 CFR 86.092-14(c)(11)(ii)(D)(1)

The vehicles described herein have been tested in accordance with 40 CFR Part 86 and based on the applicable tests are in conformance. All data and records required are on file and are available for inspection by EPA. IMPCO projects that the total annual U.S. sales of all conversion systems to be less than 15,000 units, qualifying IMPCO as a small-volume manufacturer.

2. Adjustable Parameters 40 CFR 86.092-14(c)(11)(ii)(D)(2)

Adjustable parameters, further described in 40 CFR 86.085-22(e) as the limits, stops or other means used to inhibit adjustment have been designed to accomplish their intended purpose based on good engineering judgment and past experience (Ref. – CD 86-11, Determination of Adjustable Parameters; and CD 87-5, Determination of a New Adjustable Parameter).

3. Defeat Devices 40 CFR 86.092-14(c)(11)(ii)(D)(3)

The vehicles described in this application for certification are not equipped with auxiliary emission control devices which could be classified as a defeat device as defined in 40 CFR 86.082-2. The limits, stops, and seals (or other means used to inhibit adjustment) have been designed to accomplish their intended purpose based on good engineering judgment and past experience (Ref. – AC #24).

4. Unreasonable Risks 40 CFR 86.092-14(c)(11)(ii)(D)(4)

IMPCO attests that any element of design, system, or emission control device installed on or incorporated in our vehicles for the purpose of complying with standards prescribed under Section 202 of the Clean Air Act will not, to the best of our information and belief, cause the emission of pollutants into the ambient air in the operation of our motor vehicles which cause or contribute to an unreasonable risk to the public health or welfare except as specifically permitted by the standards prescribed under Section 202 of the Clean Air Act. Any element of design, system, or emission control device installed on or incorporated in our vehicles for the purpose of complying with the standards prescribed under Section 202 of the Clean Air Act will not, to the best of our information and belief, cause or contribute to an unreasonable risk to public safety. The term “pollutant” includes:

a. Diesel particulates
b. Nickel compounds
c. MMT combustion by-products
d. Ammonia compounds
e. Sulfates
f. Hydrogen sulfide
g. Hydrogen cyanide
h. Ruthenium combustion by-products
i. Nitrosamines
j. Or any other pollutant which can reasonably be expected to be emitted from these vehicles.

5. **High-Altitude Compliance 40 CFR 86.092-14(c)(11)(ii)(D)(5)**
   Based upon our engineering evaluation, the medium-duty vehicles described in this application comply with emission standards at high altitude unless exempt under 86.090-8(h).
6. **Spare Parts and Maintenance Service 40 CFR 86.092-14(c)(11)(ii)(D)(7)**
   IMPCO Automotive affirms that a list of emission and emission-related service parts will be provided to the vehicle owner in the owner's manual.

B. Compliance Statements

1. **CALIFORNIA FUEL FILL PIPE COMPLIANCE**
   The OEM attests that all vehicles in this test group meet the CA fuel fill pipe and corresponding fill pipe access zone requirements.

   IMPCO does not modify or alter the fuel fill pipe in any way; therefore, it is expected to remain in compliance.
2. **FEDERAL AND CALIFORNIA EMISSION CONTROL SYSTEM CONTINUITY**
   Based on engineering evaluations of emission testing between 20°F and 86°F, there is no discontinuity in emission performance of NMOG, CO, NOx or HCHO as measured on the Federal Test Procedure in the temperature range of 20°F to 86°F for vehicles in this test group.
3. **CALIFORNIA VEHICLE EMISSION CONTROL LABEL (TUNE-UP) COMPLIANCE**
   IMPCO attests that the vehicle emission control label complies with the label durability requirements of the "California Motor Vehicle Emission Control and Smog Index Label Specifications", Title 13, CCR, Section 1965.
4. **CALIFORNIA WARRANTY COMPLIANCE**
   IMPCO attests that the vehicles in this test group comply with the California warranty requirements of Title 13, CCR, Sections 2037, 2038 and 2039.
5. **FEDERAL AND CALIFORNIA OTTO-CYCLE, GASOLINE FUELED, AND NATURAL GAS FUELED FORMALDEHYDE EMISSIONS COMPLIANCE**
   Based on an engineering evaluation of formaldehyde emission test data, vehicles in this test group are expected to comply with the formaldehyde emission standards.
6. **FEDERAL AND CALIFORNIA OTTO-CYCLE, PARTICULATE MATTER EMISSIONS COMPLIANCE**
   Based on an engineering evaluation of the particulate matter emission test data, vehicles in this test group are expected to comply with the particulate matter emission standards.
7. **FEDERAL HIGH ALTITUDE EMISSIONS COMPLIANCE**
   Based upon an engineering analysis, vehicles in this test group are expected to comply with the FTP, evaporative and ORVR standards at high altitude.
8. **FEDERAL CERTIFICATION SHORT TEST (CST) EMISSIONS COMPLIANCE**
   Based on an 86.1811-04(h), CST is not applicable to alternative-fueled vehicles.
9. **FEDERAL ON-BOARD DIAGNOSTIC (OBD) COMPLIANCE**
   Based on 40 CFR 1806-05(j), all vehicles in this test group meet Federal OBD requirements.

10. **FEDERAL NITROUS OXIDE (N2O) EMISSIONS COMPLIANCE**
    Based on an evaluation of available information, vehicles in this test group are expected to comply with the N2O exhaust emission standard.
11. **FEDERAL TIER 2 AND INTERIM NON-TIER 2 LEAK-FREE EXHAUST**
    This vehicle has been designed with a leak-free exhaust system. A ''leak-free'' exhaust system is one in which leakage is controlled so that it will not lead to a failure of the certification exhaust emission standards in-use.
12. **EXHAUST, EVAPORATIVE AND REFUELING EMISSIONS USEFUL LIFE COMPLIANCE**
    Based upon IMPCO's good engineering judgment, all of the vehicles described in this application for certification comply with all applicable intermediate and full useful life emissions standards.
13. **CNG REFUELING RECEPTACLE**
    The natural gas refueling receptacle shall comply with the receptacle provisions of the ANSI/AGA NGV1–1994 standard.
14. **PM COMPLIANCE**
    IMPCO Automotive has conducted sufficient testing to demonstrate that CNG vehicles/engines do not exceed PM pollutant standards. This statement of compliance is provided in lieu of test data.
15. **OBD II COMPLIANCE**
    A copy of the ARB OBDII approval letter has been submitted to DMS and Verify.

February 3, 2016
Date

C. Certificate Information

Corporate name:	IMPCO Technologies, Inc.
E-mail Certificate to:	BSchafer@ImpcoAutomotive.com Bruce Schafer IMPCO Automotive 7100 15 Mile Road Sterling Heights, MI 48312
Applicable Emissions Standards to be listed on Certificate:	US EPA Tier 2, Bin 7 ARB MDV SULEV230
Test Group:	GZ9XD06.0DC2
Evaporative Family:	GZ9XR0000DCA

Models to be listed on Certificate:

Chevrolet G4500 EXPRESS 2WD CUTAWAY CH
GMC G4500 SAVANA 2WD CUTAWAY CH

Appendix A – CSI Report

Certification Summary Information Report

Manufacturer	IMPCO Technologies, Inc.	**Manufacturer Code**	Z9X
Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	06/15/2016 11:03:09 AM
Model Year	2016		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	--
GHG Exempt Status	Conditional Exemption		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
CNG	Multipoint/sequential fuel injection	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	--
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	--
Fuel Cell Indicator	--	**EPA Vehicle Class**	HDV2
Federal Clean Fuel Vehicle	Yes	**Federal Clean Fuel Vehicle Standard**	LEV
Federal Clean Fuel Vehicle ILEV	Yes	**California Partial Zero Emissions Vehicle Indicator**	No
Durability Group Name	GZ9XT06P0CDA	**Durability Group Equivalency Factor**	1
Reduced Fee Test Group	Yes	**Certification Region Code(s)**	FA, CA
Complies with HD GHG 2b/3 regulations?	Yes		
Introduction into Commerce Date	02/22/2016	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Not Applicable	**SFTP Tier 2 Composite CO Option**	--
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	GZ9XD06.0BC2
Test Group OBD Compliance Level	Full - no deficiencies	**Number of Test Group OBD Deficiencies**	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Evaporative/Refueling Family Information

Evaporative Summary Information Type	New	**Submission/Correction Date**	07/30/2015 12:23:18 PM
Integrated ORVR?	No	**Fuel(s)**	CNG
Multiple Fuel Storage	--		
Bladder Fuel Tank?	No		
Fuel Tank Material	Metal	**Fuel Tank Material Description**	--
Fill Pipe Seal Type	Mechanical seal		
Air Intake System Vapor Storage Device?	No	**Air Intake System Vapor Storage Device Description**	--
Fuel System Vapor Storage Canister?	No	**Other Vapor Storage**	--
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	0	**Number of Primary Canisters**	0
Number of Bleed Canisters	0	**Bleed Canister Total Working Capacity (grams)**	--
Mfr Evaporative/Refueling Family Comments	CNG uses a sealed system.		

Leak Family Details

Leak Family Indicator	No		
Canister Bleed Test Indicator	No	**Applicability of Evaporative Canister Bleed Test**	--
Evaporative Canister Bleed Test Comments	--		
CARB Fuel Only (Rig) Test Indicator	No	**Applicability of CARB Fuel Only (Rig) Test**	--
CARB Fuel Only (Rig) Test Comments	--		

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
IMPCO Technologies, Inc.	8 - IMPCO Automotive - General Motors	48 - GMC G4500 Savana 2WD Cutaway	Federal	2-Wheel Drive, Rear	Automatic	6	Yes
IMPCO Technologies, Inc.	7 - IMPCO Automotive - Chevrolet	47 - Chev G4500 Express 2WD Cutaway	Federal	2-Wheel Drive, Rear	Automatic	6	Yes
IMPCO Technologies, Inc.	7 - IMPCO Automotive - Chevrolet	47 - Chev G4500 Express 2WD Cutaway	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	6	Yes
IMPCO Technologies, Inc.	8 - IMPCO Automotive - General Motors	48 - GMC G4500 Savana 2WD Cutaway	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	6	Yes

Engine Description

Hybrid Type	--	**Hybrid Description**	--
Engine Type	4-Stroke Spark Ignition	**Mfr Engine Description**	--
Engine Block Arrangement	V-shaped engine	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	No	**Oil Viscosity/Classification**	SAE 5w20
Number of Cylinders/Rotors	8		

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	Evaporative/Refueling Family	GZ9XR0000DCA

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Paladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Paladium + Rhodium	Ceramic	Monolith
3	Three-way catalyst	Paladium + Rhodium	Ceramic	Monolith

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	Not Equipped
Mfr Emission Control Device Comments	IMPCO does not modify the OEM emission control system.

Engine Configuration Number 1

Engine Displacement (liters)	6.0	**Engine Rated Horsepower**	324
Number of Inlet Valves Per Cylinder	1	**Number of Exhaust Valves Per Cylinder**	1
Air Aspiration Method	Naturally Aspirated	**Number of Air Aspiration Devices**	0
Air Aspiration Device Configuration	--	**Charge Air Cooler Type**	N/A
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	CAM Phaser		
Variable Valve Lift?	No		
Variable Valve Lift System Description	--		
Number of Knock Sensors	2	**Number of Air/Fuel Sensors**	4
Air/Fuel Sensor # 1 Type	Heated oxygen	**Air/Fuel Sensor # 1 Description**	--
Air/Fuel Sensor # 2 Type	Heated oxygen	**Air/Fuel Sensor # 2 Description**	--
Air/Fuel Sensor # 3 Type	Heated oxygen	**Air/Fuel Sensor # 3 Description**	--
Air/Fuel Sensor # 4 Type	Heated oxygen	**Air/Fuel Sensor # 4 Description**	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	**Cooled Exhaust Gas Recirculation**	No
EGR Type	--	**Exhaust Gas Recirculation Description if 'Other'**	--
Closed Loop Air Injection System	No		
Air Injection Type	Not Applicable	**Air Injection Type if 'Other'**	--
Mfr Engine Configuration Comments	Hardened Valve Seats		

Official Test Numbers

Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
CNG	GZ9X10039822	--	--	--	GZ9X10039823	--	--	--	--	--

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Emission Data Vehicle Information

Vehicle ID / Configuration	E10024EX / 1	**Manufacturer Vehicle Configuration Number**	1
Original Test Group Name	GZ9XD06.0DC2	**Original Evaporative/Refueling Family**	GZ9XR0000DCA
Original Test Vehicle Model Year	2016		

Vehicle Model

Represented Test Vehicle Make	Chevrolet	**Represented Test Vehicle Model**	Express Van

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	CNG

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	--	**Rechargeable Energy Storage System Indicator**	--
Rechargeable Energy Storage System	--	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	--		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	22	**Rated Horsepower**	324
Displacement (liters)	6		
Air Aspiration Method	Naturally Aspirated	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	--	**Air Aspiration Device Configuration**	--
Charge Air Cooler Type	--	**Drive Mode While Testing**	2-Wheel Drive, Rear
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	120,000 (mi)
Curb Weight (lbs)	7500	**Equivalent Test Weight (pounds)**	13000
GVWR (lbs)	14000	**N/V Ratio**	26
Axle Ratio	3.42		
Transmission Type	Automatic	**# of Transmission Gears**	6
Transmission Lockup	Yes	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	98.9	0.8639	0.08803	53.53	0.526	0.08673	48.3

Emission Control Device Comments --

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA
Manufacturer Test Vehicle Comments	14,200 GVWR - GM RECEIVED EPA APPROVAL		

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Test #	**GZ9X10039822**	**Test Procedure**	**2 - CVS 75 and later (w/o can. load)**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	41 - CNG
Test Date	12/16/2015	**Fuel**	CNG
Fuel Batch ID	D0412	**Fuel Calibration Number**	1
Vehicle Class	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	**DF Type**	Aged components installed In the emission data vehicle
Verify Test Lab ID	ProCat Testing LLC		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4051	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.414	--
CO (Carbon Monoxide)	1.18	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	99.99	--
DT-EER (Drive Trace Energy Economy Rating)	99.99	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	99.99	--
MFR FE (Manufacturer Fuel Economy)	9.74	9.74
NOX (Nitrogen Oxide)	0.048	--
HC-NM (Non-methane Hydrocarbon)	0.038	--
NMOG (Non-methane organic gas (California))	0.0395	--
HC-TOTAL (Total Hydrocarbon)	0.501	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	731.5	731

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	728.4	--

Manufacturer Test Comments OPT-CREE = 743.7 For ARB, NMOG + NOx result is adjusted to 150K, which equals 0.093

Certification Summary Information Report

Test Group GZ9XD06.0DC2 **Evaporative/Refueling Family** GZ9XR0000DCA

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 2 Bin 7	CO	1.18	--	--	--	--	--	1.2	4.2	Pass
Fed	120,000 miles	Federal Tier 2 Bin 7	NMOG	0.0395	--	1.0	--	--	--	0.040	0.090	Pass
Fed	120,000 miles	Federal Tier 2 Bin 7	NOX	0.048	--	--	--	--	--	0.05	0.15	Pass

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Test #	**GZ9X10039823**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	41 - CNG
Test Date	12/16/2015	**Fuel**	N/A
Fuel Batch ID	D0412	**Fuel Calibration Number**	1
Vehicle Class	N/A	**DF Type**	Aged components installed In the emission data vehicle
Verify Test Lab ID	ProCat Testing LLC		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4051	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.085	--
CO (Carbon Monoxide)	0.836	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	99.99	--
DT-EER (Drive Trace Energy Economy Rating)	99.99	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	99.99	--
MFR FE (Manufacturer Fuel Economy)	12.6	12.6
NOX (Nitrogen Oxide)	0.035	--
HC-NM (Non-methane Hydrocarbon)	0.009	--
NMOG (Non-methane organic gas (California))	0.0094	--
HC-TOTAL (Total Hydrocarbon)	0.104	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	565.6	566

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	564.3	--

Manufacturer Test Comments OPT-CREE = 570.4

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Fuel Properties

Fuel Batch ID	**D0412**	**Fuel Calibration Number**	**1**
Test Fuel Type	41 - CNG	**Fuel Batch Calibration Date**	04/09/2012
Fuel Batch Calibration Effective Date	04/09/2012	**Fuel Batch Calibration Ineffective Date**	04/09/2017
Carbon Weight Fraction NMHC	0.807	**Carbon Weight Fraction HC**	0.702
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	21.048	**Fuel Specific Gravity**	0.617
Fuel Net Heating Value (BTU / lb)	20131	**Fuel Blend Carbon Weight Fraction**	0.714
Weight Fraction CO2	0.043		

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Consolidated List of Standards

Exhaust Standards

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	MDV7 (Cal. LEV 2/3 MDV GVW 10001-14000)	**Standard Level**	California LEV-III SULEV230
Fuel	CNG	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	--	3.0
150,000 miles	HCHO	--	--	--	--	--	--	--	0.006
150,000 miles	NMOG+NOX	--	--	1.15	--	--	1	--	0.230

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	**Standard Level**	Federal Tier 2 Bin 7
Fuel	CNG	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CO	--	--	--	--	--	--	--	4.2
120,000 miles	HCHO	--	--	--	--	--	--	--	0.040
120,000 miles	NMOG	--	--	1.0	--	--	--	--	0.090
120,000 miles	NOX	--	--	--	--	--	--	--	0.15

Evaporative/Refueling Standards

Evaporative/Refueling Family	GZ9XR0000DCA	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-II Evap
Test Procedure	2-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
CNG	150,000 miles	HC-TOTAL	--	1.25	--

Evaporative/Refueling Family	GZ9XR0000DCA	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal LEV-II Evap
Test Procedure	2-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
CNG	120,000 miles	HC-TOTAL	--	1.75	--

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	Evaporative/Refueling Family	GZ9XR0000DCA

Glossary

Useful Life

4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		

Emission Name

HC-TOTAL	Total Hydrocarbon	METHANOL	CH3OH - Methanol
CO	Carbon Monoxide	N2O	Nitrous Oxide
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
NMOG	Non-methane organic gas (California)	CO2 BAG 4	Bag 4 Carbon Dioxide
HCHO	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
H3C2HO	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
HC	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
METHANE	CH4 - Methane		

Certification Region

CA	California + CAA Section 177 states	FA	Federal

Exhaust Emission Standard Level

B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50
OT	Other	T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0

Transmission Type Code			
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual
A	Automatic	OT	Other
AM	Automated Manual	SA	Semi-Automatic
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)

Drive System Code			
4	4-Wheel Drive	P	Part-time 4-Wheel Drive
F	2-Wheel Drive, Front	A	All Wheel Drive
R	2-Wheel Drive, Rear		

Certification Summary Information Report

Test Group	GZ9XD06.0DC2	**Evaporative/Refueling Family**	GZ9XR0000DCA

Additional Terms and Acronyms

AFC	Alternative Fuel Converter	ICI	Independent Commercial Importer
CSI	Certificate Summary Information	ORVR	Onboard Refueling Vapor Recovery
DF	Deterioration Factor	SIL	Shift Indicator Light
Evap	Evaporation, Evaporative	Trans	Transmission

E.O. #

Appendix B – Certification Review Sheet

2016 MODEL-YEAR CERTIFICATION REVIEW SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: IMPCO Automotive Exhaust Test Group: GZ9XD06.0DC2 Evaporative/Refueling Family: GZ9XR0000DCA

PROJECTED EMISSIONS
(grams/mile, except, milligrams/mile for HCHO, grams/test for D+HS and grams/gallon for ORVR)

Data Vehicle ID	Engine Code (Displ)	Test Loc.	Trans	TW/ ETW	DPA/ RLHP	MPG City/Hwy		NMOG+NOx	CO	NOx	HCHO	20F CO	PM	Hwy NMOG+NOx	CO2 city/hwy	3-day D+HS	R/L	2-day D+HS	ORVR
1GCWGFFB5E10024EX		Roush	A6	13000	48.3	9.7/ 1267	50K												
							120K 150K	0.093	1.15	-	4.8	N/A	N/A	0.045	728/ 564	N/A	N/A	N/A	N/A

The EDV above complies with standards @ 50K of: and with standards @ 150K of: 0.230 3.0 - 6

Emission include additive/multiplicative DF's with applicable RAF for 50K of:
And include additive/multiplicative DF's[(1)] for UL of:
LEV/ULEV/SULEV 50F emissions (without RAF and DFs):
LEV/ULEV/SULEV 50F standards:

	US06 NMHC+NOx	US06 CO	SC03 NMHC+NOx	SC03 CO	NMHC+NOx Composite
SFTP emissions (without RAF and DFs) @ 4k:					
SFTP emissions @ 120k:					
SFTP standard @ 4K:					
SFTP standard @ 120k:					

(1) Evap/refueling DFs are average of

	3-day D+HS	2-day D+HS	R/L	ORVR
Vehicle				
Bench				

Remarks: Certification testing was conducted with catalytic converters, HO2S Front and CMS aged to their useful life of 120K. Test results are adjusted to 150K.

ARB Use

Application
Processed by: _____ Date: _____ Reviewed by: _____ Date: _____

Appendix C – Supplemental Data Sheet

E.O.#

2016 MY AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: **IMPCO Automotive** Durability Group: **GZ9XD60GMCA** Test Group: **GZ9XD06.0DC2**

Evap Fam: **GZ9XR0000DCA**

Test Group Cert: CA ____ FED ____ 50S **XX** AB965 ____

Exhaust Std: LEV2 LEV ____ LEV2 ULEV ____ MDVSULEV230 **XX** EPA BIN **7**

Vehicle Type: PC ____ LDT1(<6001 GVWR,0-3750 LVW) ____ LDT2(<6001 GVWR,3751-5750 LVW) ____
LDT3(6001-8500 GVWR,3751-5750 ALVW) ____ LDT4(6001-8500 GVWR,5751-8500 ALVW) ____
MDV(8501-10000 GVWR) ____ MDV(10001-14000 GVWR) **XX**

In-Use Exh Std: Full in-use **XX** Alt in-use ____ N/A ____

Exh DDV Basis: 100K ____ 120K ____ 150K **XX**

Fuel Usage: Dedicated **XX** Flex-Fuel ____ Dual-Fuel ____ Bi-fuel ____

Fuel Type(s): Gasoline ____ CNG **XX** M85 ____ Diesel ____ LPG ____ E85 ____
Other (specify) ____

Exh Emis Test Fuel:
Tier2Indo ____ Ph2 ____
Diesel ____ M85 ____ E85 ____ CNG **XX** LPG ____
Other (specify) ____

NMOG Test Proc: Std **XX** Equiv ____ N/A ____ RAF: NMOG ____ CH4 ____

EDV Std Compliance: DF ____ Aged Parts **XX** Other (specify) ____ 120K Emissions adjusted to 150K using assigned DF

Exhaust ECS: (Use abbreviations per SAE J1930)
1 **ECM/2TWC/TWC/2HO2S/2HO2S/SFI** EGR Type NA
2 ____ AIR Type NA

NMOG Flt Avg (g/mi): ____ Ratios (NMOG w/o RAF) NMOG/NMHC ____ HCHO/NMHC 0.12

OBD2 Compliance: **XX** Full Engine Configuration **V8** Valves per cylinder **2**
____ Partial
____ Partial w/fines Displacement (liters/cubic inches) Rated HP/RPM
(1): **6.0L** 322@5,000 RPM
(2): ____

Engine location: Front **XX** Mid ____ Rear ____

Drive: FWD ____ RWD **XX** 4WD-FT ____ 4WD-PT ____

Evap Fam #	ECS #	Displ. (liters)	Models	Trans	Vehicle type
GZ9XR0000DCA	**1**	**6.0L**	**Chevrolet G4500 EXPRESS 2WD CUTAWAY CH**	**A6**	**HDV**
			GMC G4500 SAVANA 2WD CUTAWAY CH		

Application Processed by: ____ Date: ____ Reviewed By: ____ Date: ____

Appendix D – EPA Fee Payment

Appendix E –

Appendix F – CNG Fuel Specifications

PRAXAIR

Praxair Distribution
37256 Highway 30
Geismar, LA 70734
Tel: 225-677-7700
Fax: 225-673-3531

04/09/2012

PRAXAIR WHSE DETROIT MI HUB
12820 EVERGREEN RD
DETROIT, MI 482230000

Praxair Order No. **19828787**
Customer Reference No. **IMPCO**
Product Lot/Batch No. **Z585 2090 C6**
Praxair Part No. **ME X5C20-T**

CERTIFICATE OF ANALYSIS

Certified Standard

Component	Requested Concentration	Certified Concentration	Analytical Principle	Analytical Accuracy
tert-Butyl mercaptan	**3-5 ppm**	**5.00 ppm**	**U**	**+/-5 %**
Carbon dioxide	**1.75 %**	**1.75 %**	**J**	**+/-2 %**
Ethane	**4 %**	**4.01 %**	**D**	**+/-2 %**
Nitrogen	**1.75 %**	**1.75 %**	**J**	**+/-2 %**
Propane	**2 %**	**2.02 %**	**D**	**+/-2 %**
Methane	**balance**	**balance**		
n-Hexane	**<0.2 %**	**<0.2 %**		
Oxygen	**<0.5 %**	**<0.5 %**		
Carbon monoxide	**<0.1 %**	**<0.1 %**		
Sulfur	**<16 ppm**	**<16 ppm**		
Hydrogen	**<0.1 %**	**<0.1 %**		

Analytical Instruments: **Agilent 7890A**
Cylinder Style: **T**
Cylinder Pressure @70F: **1585 psig**
Cylinder Volume: **228.8 ft3**
Valve Outlet Connection: **CGA-350**
Cylinder No(s). **300-282213**

Filling Method: **Gravimetric**
Date of Fill: **03/30/2012**
Expiration Date: **03/30/2015**

Analyst: **Derek Linder - Chemist**

QA Reviewer: **Laurie Juneau - Chemist**

The gas calibration cylinder standard prepared by Praxair Distribution is considered a certified standard. It is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard provided is certified against Praxair Reference Materials which are either prepared by weights traceable to the National Institute of Standards and Technology (NIST) or by using NIST Standard Reference Materials where available.

Note: All expressions for concentration (e.g., % or ppm) are for gas phase, by volume (e.g., ppmv) unless otherwise noted.

Key to Analytical Techniques:

A	Flame Ionization with Methanizer	B	Gas Chromatography with Discharge Ionization Detector	C	Gas Chromatography with Electrolytic Conductivity Detector	D	Gas Chromatography with Flame Ionization Detector
E	Gas Chromatography with Flame Photometric Detector	F	Gas Chromatography with Helium Ionization Detector	G	Gas Chromatography with Methanizer Carbonizer	H	Gas Chromatography with Photoionization Detector
I	Gas Chromatography with Reduction Gas Analyzer	J	Gas Chromatography with Thermal Conductivity Detector	K	Binary Gas Analyzer with Thermal Conductivity Detector	L	Infrared - FTIR or NDIR
M	Mass Spectrometry - MS or GC/MS	N	By Difference of Typical Impurities	O	Paramagnetic	P	Specific Water Analyzer
Q	Total Hydrocarbon Analyzer	R	Wet Chemical	S	Detector Tube	T	Odor
U	Gas Chromatography with Chemiluminescence Detector	V	Electrochemical	W	Hygrometer	X	Electron Capture Detector
Y	Certified Gravimetrically	Z	N/A				

IMPORTANT
The information contained herein has been prepared at your request by personnel within Praxair Distribution. While we believe the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall liability of Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

Pg.1 of 1

7100 15 Mile Road
Sterling Heights MI 48312
Tel: (586) 264-1200
Fax: (586) 264-2344
www.impcoautmotive.com

February 3, 2016
Revised June 15, 2016 C04-16

Ms. Annette Hebert, Chief
California Air Resources Board
Emissions Compliance, Automotive Regulations and Science Division
9480 Telstar Avenue, Suite 4
El Monte, CA 91731-2988

Request for Executive Order – 2016 IMPCO Test Group GZ9XD06.0DC2

Dear Ms. Hebert:

IMPCO respectfully requests that ARB issue an Executive Order for the subject test group.

Enclosed find the application for certification for model year 2016 6.0L Express/Savana cutaway chassis vans converted to dedicated CNG operation from the General Motors test group GGMXD06.0399**.** IMPCO Automotive believes that the test group complies with all applicable regulations contained within Title 40 of the CFR, California Amendments to Subparts B, C, and S, Part 86 and Part 88, Title 40 of the CFR, and Title 13 of the California Code of Regulations. IMPCO further states that all vehicles in this test group are in all material respects as described in the Application for Certification and comply with all requirements of 40 CFR 86 and the Clean Air Act.

The June 15, 2016, revision adds General Motors test group GGMXD06.0398 to the currently certified IMPCO test group.

A copy of the EPA Certificate of Conformity will be uploaded to DMS when it becomes available.

Your prompt review of this application is appreciated. For additional information, please contact me at (586)276-4348.

Best Regards,

James Murphy
Regulatory and Compliance Manager
Enclosure

7100 15 Mile Road
Sterling Heights MI 48312
Tel: (586) 264-1200
Fax: (586) 264-2344
www.impcoautmotive.com

February 3, 2016
Revised June 15, 2016 C05-16

Mr. Michael Sabourin
U.S. Environmental Protection Agency
Vehicle Programs and Compliance Division
2000 Traverwood
Ann Arbor, MI 48105

Request for Certificate of Conformity – 2016MY IMPCO Test Group GZ9XD06.0DC2

Dear Mr. Sabourin,

IMPCO respectfully requests that EPA issue a Certificate of Conformity for the subject test group.

Enclosed find the application for certification for model year 2016 6.0L Express/Savana cutaway chassis vans converted to dedicated CNG operation from the General Motors test group GGMXD06.0399**.** IMPCO Automotive believes that the test group complies with all applicable regulations contained within Title 40 of the CFR, California Amendments to Subparts B, C, and S, Part 86 and Part 88, Title 40 of the CFR, and Title 13 of the California Code of Regulations. IMPCO further states that all vehicles in this test group are in all material respects as described in the Application for Certification and comply with all requirements of 40 CFR 86 and the Clean Air Act.

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Best Regards,

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Regulatory and Compliance Manager
Enclosure